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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/063,151	03/26/2002	Hemant S. Shah	201-0171 CLH	2725

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EXAMINER

MILLER, PATRICK L

ART UNIT PAPER NUMBER

2837

DATE MAILED: 12/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/063,151

Applicant(s)

SHAH ET AL.

Examiner

Patrick Miller

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13, 15, 16 and 18-21 is/are rejected.
- 7) ☒ Claim(s) 14, 17 and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Drawings*

1. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Specification*

2. The disclosure is objected to because of the following informalities: Paragraph [0018] should explicitly state that the schematic is "Prior Art". Appropriate correction is required.

### *Claim Objections*

3. Claims 14 and 20 are objected to because of the following informalities:
  - Claim 14 cites "the air-moving devices". There is a lack of antecedent basis for this term. Claim 1 initially cites a singular air-moving device.
  - Claim 20 cites "The method". There is a lack of antecedent basis for this term. The examiner believes this claim is inadvertently dependent on claim 18, and should be dependent on claim 19. Appropriate correction is required.

*Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

4. Claims 1-7, 12, 19, 20, and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by McCormick (6,379,110).

- With respect to claims 1 and 21, McCormick discloses a system (article of manufacture) for noise reduction from an air-moving device, comprising: a shroud having an inner surface disposed around an area defining an airflow (Fig. 10, #227; airflow occurs in area of #226 due to pressure differences), an outer barrel connected to the shroud (Fig. 10, #212 connected to #227), the outer barrel having an inner and outer surface extending from the shroud inner surface and further defining the airflow (Fig. 10, #212 has an inner and outer surface extending from #227 and air flows on both surfaces of #212 via #228 and #213, 214), a plurality of noise silencers comprising a hollow cavity that attenuates noise frequency ranges within the airflow (Fig. 2, #19), and the plurality of noise silencers connected to the airflow by at least one opening through the outer barrel (Fig. 10, #226 connected to airflow by #228 which is through the outer barrel #212).

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- With respect to claim 2, the noise silencers are attached to the outer barrel outer surface (Fig. 10, #226 is attached to #212's outer perimeter, where outer is defined in this instance as radially outward, i.e. #213 would be the inner surface of #212).
- With respect to claim 3, the noise silencers are attached to the shroud (Fig. 10, #227).
- With respect to claim 4, stator members are attached to the barrel inner surface (Fig. 10, #222).
- With respect to claims 5, 6, and 7, the barrel (Fig. 10, #212) extends both upstream (#213) and downstream (#214) of the air moving device.
- With respect to claim 18, the noise silencer further comprises a pipe disposed between the opening through the outer barrel and the hollow cavity (Fig. 10, #228 is disposed between #229 and #226).
- With respect to claim 12, a plurality of noise silencers are arranged in parallel, with respect to the airflow direction (Fig. 2, # 19's are parallel with respect to the airflow. That is the airflow heading directly toward the page).
- With respect to claim 19 and 20, and referencing Figure 10, McCormick discloses a method for reducing noise from an air-moving device comprising the steps of: creating an airflow through a shroud and outer barrel (airflow in #227 and #212), communicating air from the airflow within the barrel to a cavity with an opening (airflow from air in #212 to #226), reducing airflow noise resonating an air plug present in the opening forming a mass that resonates on support of a spring force formed by the air enclosed in the cavity (airplug is #228), and redirecting airflow using stator members (airflow redirected by #'s 218 and 222).

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCormick as applied to claim 1 above, and further in view of Pla (5,590,849).

- McCormick teaches all of the limitations of claim 1 above, but with respect to claims 8, 9, and 10, does not disclose the noise silencer being a Helmholtz resonator, broadband silencer, and narrowband silencer, respectively. Further, McCormick discloses a plurality of noise silencers, but does not specify them being used for broadband and narrowband applications (Claim 11).
- Pla discloses using arrays of piezoceramic radiating plates and resonators to reduce the output noise generated by the fan (Fig. 2, #222 and #247). Pla teaches active and passive devices are used to control broadband and narrowband applications. Specifically, active noise devices, such as a piezoceramic actuator plate reduce narrowband noise, and broadband noise (Col. 1, lines 42-46). Pla further teaches Helmholtz resonators reduce narrowband and noise (Col. 4, lines 31-33). Pla's motivation for providing a plurality of Helmholtz resonators that reduce broadband and narrowband applications is to generate the noise source's resonant frequency (Col. 3, lines 35-47). This provides the advantage of canceling or reducing noise throughout an entire frequency range, while at the same time eliminating stronger noise signals at specified frequencies.

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- Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the structure of McCormick with a plurality of Helmholtz resonators that can be applied to broadband and narrowband applications, thereby providing the advantage of canceling or reducing noise throughout an entire frequency range, as taught by Pla.
6. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over McCormick as applied to claim 1 above, and further in view of Blichmann (5,625,172).
- McCormick teaches all of the limitations of claim 1 above, but with respect to claim 13, does not disclose the noise silencers being arranged in a series configuration.
  - Blichmann discloses placing two Helmholtz resonators in series, with respect to the airflow. Blichmann's motivation for placing two Helmholtz resonators in series is because Helmholtz resonators typically eliminate a small frequency band. Placing them in series provides the advantage of eliminating multiple frequencies (Col. 4, lines 45-50).
  - Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the structure of McCormick by placing a plurality of noise silencers in series, with respect to the airflow, thereby providing the advantage of eliminating multiple frequencies, as taught by Blichmann.
7. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over McCormick as applied to claim 1 above, and further in view of Rice (5,979,593).
- McCormick teaches all of the limitations of claim 1 above, but with respect to claim 15, does not disclose the noise silencer cavity comprising a sound absorbing material.

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- Rice discloses a noise silencer cavity with a sound-absorbing segment (Col. 13, lines 21-26). Rice's motivation for providing a sound-absorbing material in the noise silencer cavity is to absorb any spurious radiation that may be generated from the active mode-scattering section (Col. 6, lines 13-20). This provides the of provides the advantage of eliminating modal spill-over created by the active acoustic device.
  - Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the structure of McCormick by providing a sound-absorbing material in the noise silencer cavity, thereby providing the advantage of eliminating modal spill-over, as taught by Rice.
8. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over McCormick and Rice as applied to claims 1 and 15 above, and further in view of Aoyama (5,638,940).
- McCormick and Rice teach all of the limitations of claims 1 and 15 above, but with respect to claim 16, do not disclose the sound absorbing material in the noise silencer is steel wool.
  - Aoyama discloses a noise-silencing chamber that is comprised of steel wool (Col. 5, lines 13-20). Aoyama's motivation for using steel wool in a silencing chamber is to reduce the amount of airflow, or slow-down the airflow. This provides the advantage of further reducing noise (Col. 5, lines 1-12).
  - Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the structure of McCormick and Rice by making the sound absorbing material in the noise silencer from steel wool, thereby providing the advantage of further reducing noise, as taught by Aoyama.

***Allowable Subject Matter***

9. Claims 14 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

- With respect to claim 14, the Prior Art does not suggest a system comprised of two fans such as disclosed by McCormick that is configured to attenuate noise flowing through an air passage.
- With respect to claim 17, neither McCormick nor the Prior Art discloses an additional barrel (inner barrel). Further, neither McCormick nor the Prior Art discloses at least one noise silencer is attached to the air-moving device. Rather, the noise silencers are arranged on the barrel.

***Prior Art of Record***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Takeshita (6,390,770) discloses a fan shroud with a shroud and a means to attenuate airflow noise.
- Periyathamby (6,309,176) discloses a fan shroud lined with Helmholtz resonators.

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*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Miller whose telephone number is 703-308-4931. The examiner can normally be reached on M-F, 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Nappi can be reached on 703-308-3370. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-3431.

Patrick Miller  
Examiner  
Art Unit 2837

pm  
December 16, 2002

  
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